



THORN CASEMENTS

MEDIUM AND
HEAVY TYPES

02890

1854

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THORN

STEEL CASEMENTS

Medium and Heavy Types

CATALOG M-H 1

J. S. THORN CO.

PHILADELPHIA

NEW YORK

BOSTON



Thorn casements create an atmosphere of cheerfulness, harmony and beauty, inspiring the mind to its greatest accomplishments
"Wondrous is the strength of cheerfulness, altogether past calculation, its power of endurance"—CARLYLE

BRIEF HISTORY OF CASEMENT WINDOWS

The casement window has carried with it down through the ages the advantages of beauty, architectural harmony, simplicity, flexibility of design and practicability. Architects of all times have realized that the thought expression "A beautiful window" can only be accomplished by the casement with its many harmonious combinations.

The Old English castle of centuries ago, massive and beautiful would surely have lacked architectural harmony, without its sturdy casements, crude as they were.

The very first forms of windows were merely openings or slits in the walls and roofs for the admission of light and air and occurred in the temples of the ancient Egyptians, Greeks and Romans. The early Egyptians, although they excelled in the art of glass making in the form of mosaics and beautiful ornaments as early as 3900 B. C., did not use glass for the glazing of windows. There is no evidence until about 100 B. C. that the Romans used glass in their window openings and even then cheaper substitutes were used more extensively. Specimens of window glass set in bronze and copper frames were found in Pompeii and Herculaneum and may have been used for movable or ventilating windows; however, this is doubtful and there appears to be no record of any hinged windows or casements until the Twelfth Century when the hinged, wood, unglazed casement shutter made its appearance in England.

Early examples of these crude casement shutters were used in Caldicot Castle, Monmouthshire, 1244-45, Little Wenham, Suffolk 1260-70 and Aydon Castle, Northumberland 1280. There are some buildings anteceding these which have glazed casements, but it is generally conceded that these windows have been added in later years and are really modern improvements.

About two centuries later brought the Renaissance Period and the popularity of the casement in Italy which quickly spread throughout the Continent.

The casement improved and during the Sixteenth Century and the Tudor Period, the metal casement with leaded glass was first introduced. This window, crude in its construction, was fitted with beautiful hand-wrought hardware but lacked merit otherwise.

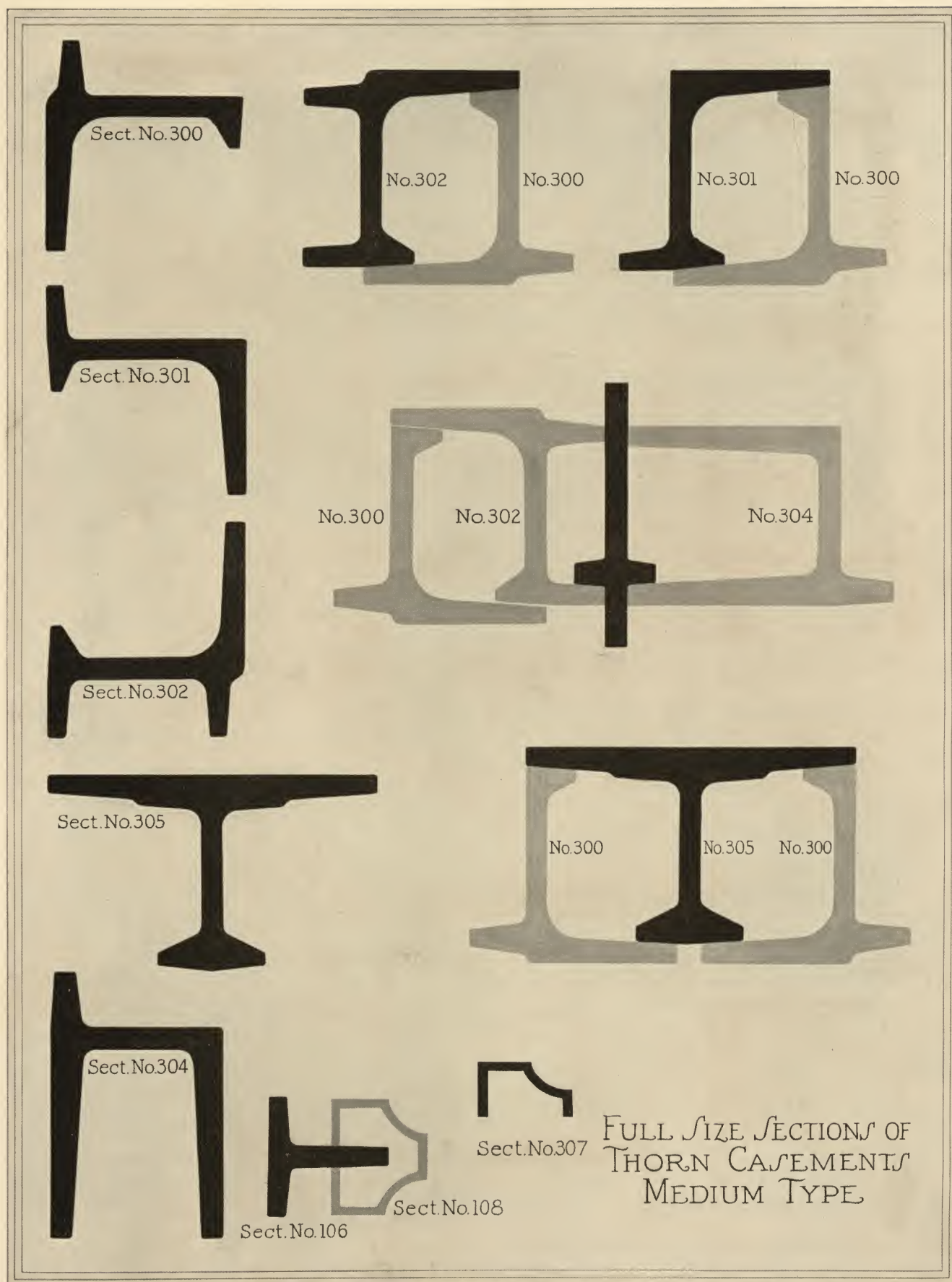
Those Master builders of yesteryear recognized that the casement provided maximum ventilation and light in addition to architectural harmony and continued to labor over the casement and slowly but surely it continued to improve.

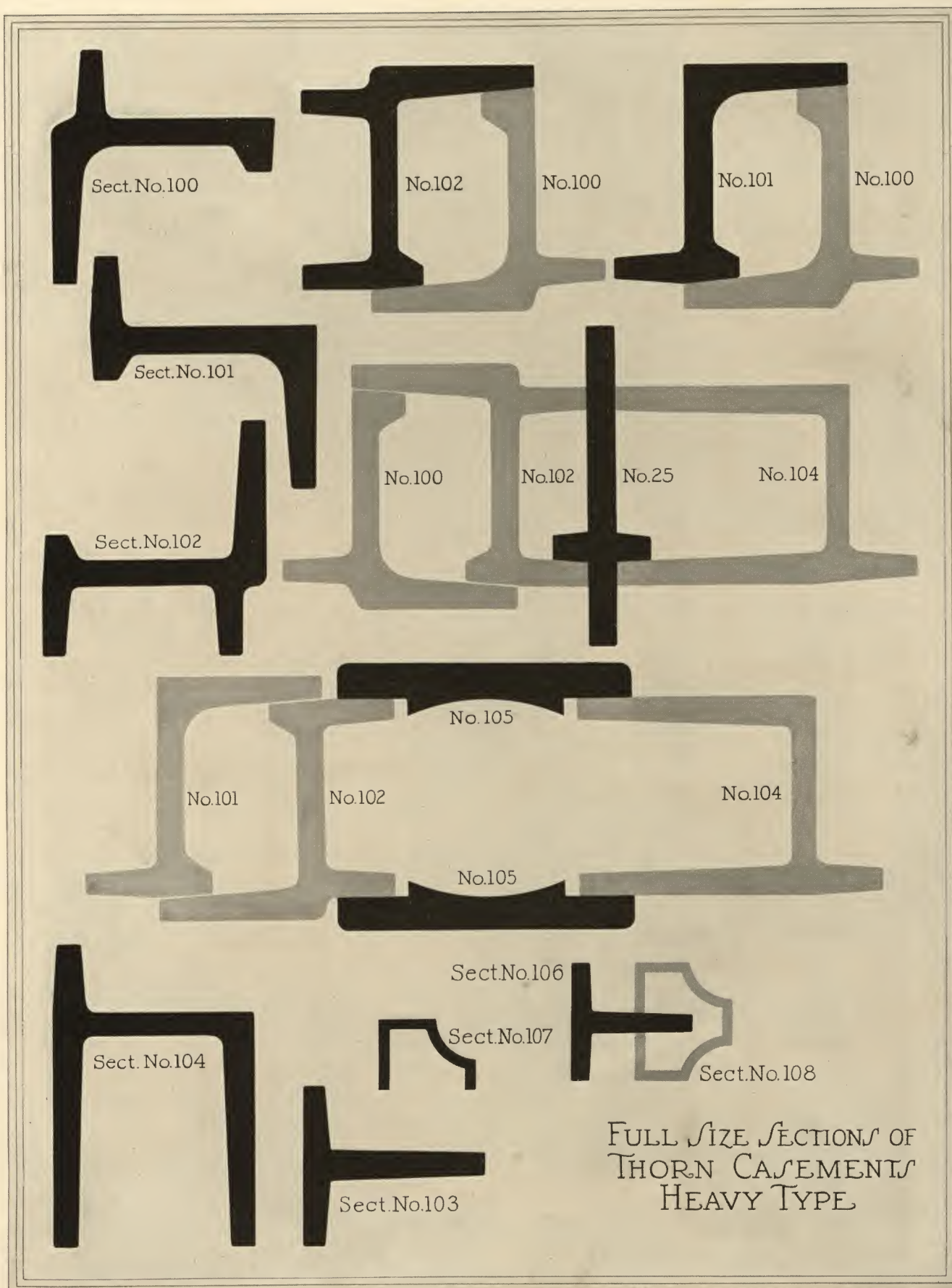
The modern casement window constructed of accurately rolled steel bars, perfectly fitted, with its double surface contact, had been thought to have almost reached perfection, but the difficulty of cleaning the outside surface of the glass still proved to be an obstacle.

The extension hinges, which projected several inches out from the sash and allowed the leaf to ride away from the frame, were then developed and the difficulty of cleaning was overcome, but another difficulty presented itself—these crude hinges were anything but beautiful and greatly detracted from the beauty which has always identified the casement from other windows.

The Thorn window experts were far from satisfied and their dissatisfaction resulted in the development of the non-projecting friction cleaning hinge which has the same appearance as the sturdy butt hinge and at the same time opens the sash in such a way as to make the outside surface of the glass readily accessible for cleaning and the crude casement shutter of centuries ago has reached the pinnacle of perfection in the Thorn steel casement window.

Our designers will gladly co-operate with architects and home builders to harmonize the modern Thorn casement with any architectural style.





SPECIFICATION

NOTE: The following is a specimen specification for general use. Where special or unusual conditions occur, we will be pleased to afford any assistance desired by Architects.

All steel casements and transoms including frames and sash shall be as manufactured by the J. S. Thorn Company, Philadelphia, Pa., or equal in the opinion of the Architect.

CONSTRUCTION: The sash shall be constructed of rolled steel bars, thoroughly cleaned of rust and scale, with corners accurately mitered, electrically welded and ground to a smooth finish. Sash and frames shall be perfectly square and true and shall be carefully fitted and bedded to insure perfect weathering and ease of operation. All intersections of vertical and horizontal muntins shall be welded. Fixed sash shall show the same sight lines as movable sash.

Glazing beads of moulded steel, carefully mitered and welded, shall be attached to sash bars by oval head brass screws.

PAINTING: Casements shall be given two coats of manufacturer's standard grey enamel, each separately baked on.

HARDWARE: All necessary hardware of solid bronze shall be furnished by Casement manufacturer and shall include fasteners of Scroll pattern, Standard Butt or Thorn Friction Cleaning hinges,—and for all casements over 5' 0" double grip bolts with steel connecting rods. Where standard butt hinges are used, provide bronze thumb screw adjuster. Where friction cleaning hinges are used, adjusters are not required.

CASEMENT DOORS AND FRENCH CASEMENTS: Casement doors where shown shall have bronze thresholds, steel kick panels, weatherstrips at sill, bronze latches with cylinder locks or dead bolts as selected, lever handles of Scroll pattern, friction adjusters at heads and bronze top and bottom bolts on each leaf.

French casements shall be equipped the same as Casement Doors except that Cremorne bolts shall be substituted for locks, and top and bottom bolts shall be provided on active leaves only. (Specify if Cremorne bolts are to be operated from inside and outside, in which case state that they shall be equipped with night latches.)

TRANSOMS: All ventilating transoms where indicated, shall have projecting ventilator type hinges, shall be self balancing and equipped with spring catches and pole rings or chains as required. Open-in transoms are to be bottom hinged and open-out, top hinged.

SUB FRAMES: Sub frames of 12 Ga. steel formed as per detail with welded corners, shall be provided where indicated. They shall be furnished by Casement Manufacturer. Frames that are too large for shipment assembled shall have sections provided with splice plates and screws for field assembly.

ERECTION: Frames are to be bedded and pointed inside and outside with Thorn Mastic Cement and Casements are to be set after plastering is completed. If sash are set in stone use lead expansion shields with brass screws. All work must be neat, accurate and weathertight.

MANUFACTURING THE THORN CASEMENT

The high quality of Thorn products is particularly emphasized in the medium and heavy type casement windows.

From the raw steel stage until the final coat of paint has been baked on, the most minute detail is not overlooked in the manufacture of this superb product.

The steel bars are carefully inspected before the work commences and only perfect bars are used, all others rejected.

These perfect bars are cut, put through powerful presses and punched with tools and dies over which the most rigid inspection is maintained, and as soon as a punch shows the slightest indication of wear, it is replaced by another, fresh from our tool department. Therefore, the machine work on the bars is clean, sharp and true.

The bars of the window frame and the sash frame for all square work are cut on a mitre and placed in a special butt welding machine which holds them close together and at perfect right angles while it welds the bars into one piece, making a perfect square of the most rigid construction.

The excess metal is ground smooth and the sash is then fitted to the frame by hand, the hinges attached and glazing beads inserted.

A rigid inspection is then conducted of each individual unit and the perfect sash is given two sprayed coats of elastic grey enamel, each baked on.

The fine workmanship in the Thorn product expresses steel window craft of the very highest quality.

GENERAL INFORMATION

RECOMMENDED TYPES: Medium section windows are recommended for normal size casements and doors not exceeding 2' 6" in width and 6' 0" in height. Heavy section windows should be used for all openings exceeding these dimensions, up to a maximum size of 3' 0" in width and 8' 0" in height. Wherever possible, it is suggested that casements be made to open outward. Open-out casements are less expensive and will remain weathertight under more exacting conditions than open-in casements.

Square head casements are much more economical than casements with circle, oval or gothic heads. Where openings demand circle, oval or gothic head windows, a saving will be effected if the portion above the spring line is made stationary.

Bull's-eye windows, if made to open, should always be either vertically or horizontally center pivoted.

FASTENERS: In general, casements should be provided with fasteners as indicated below:

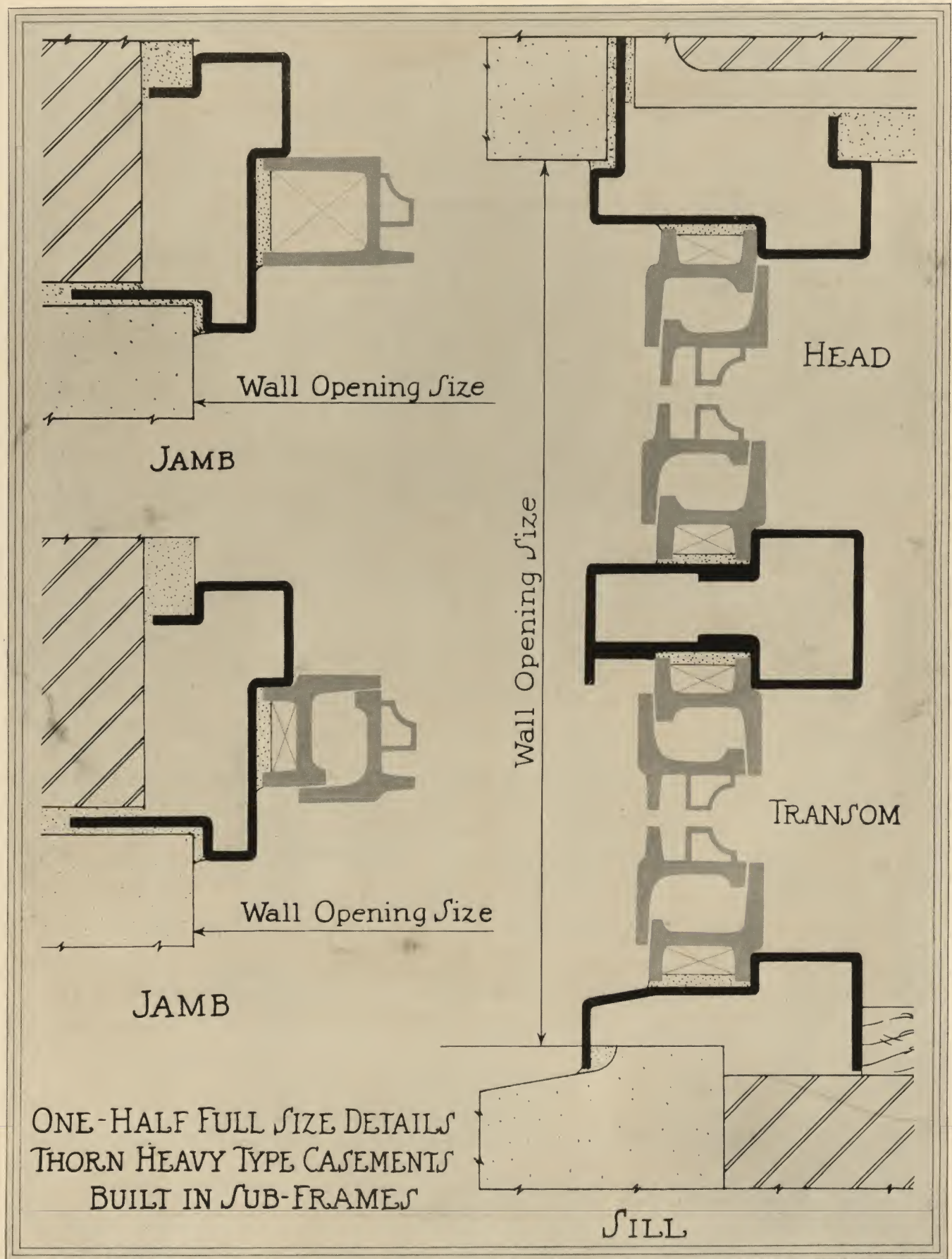
	Up to 5' 0"	5' 0" to 6' 0"	6' 0" to 7' 0"	7' 0" to 8' 0"
Heavy Sec.	Single Handle	Single Handle	2 Grip Handle	3 Grip Handle
Medium Sec.	Single Handle	2 Grip Handle	3 Grip Handle	

Where distance from floor to the center of a single handle is out of reach, it is necessary to use a two grip bolt even though the window height would only require a single grip fastener.

ERECTION: Proper erection is just as important as proper manufacture of casements.

It is therefore advisable to have the window manufacturer install the windows whenever possible. Improper erection will ruin the weathering qualities of windows and their proper operation.

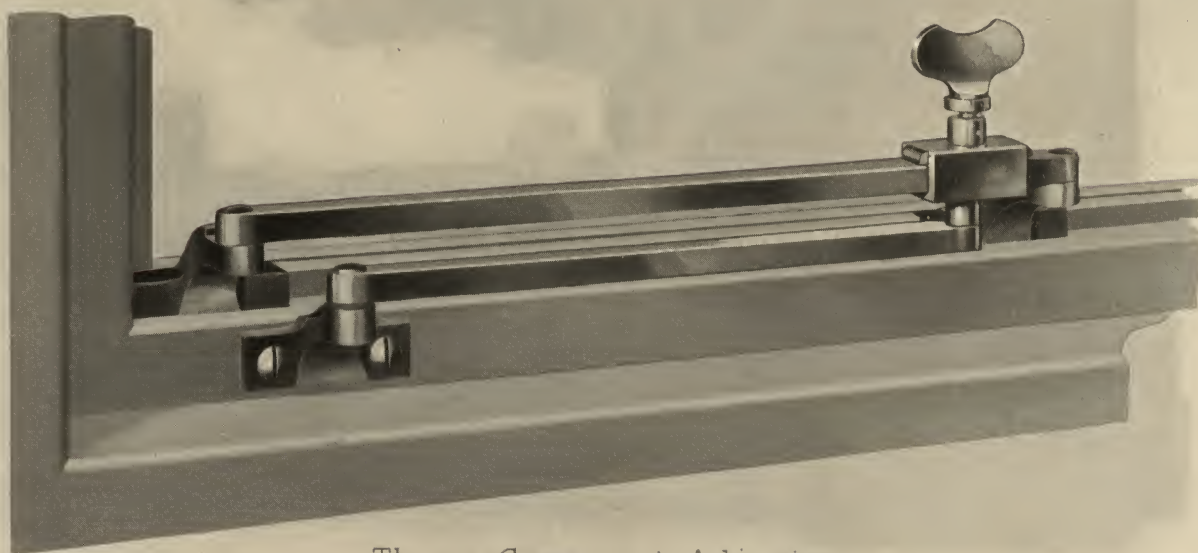
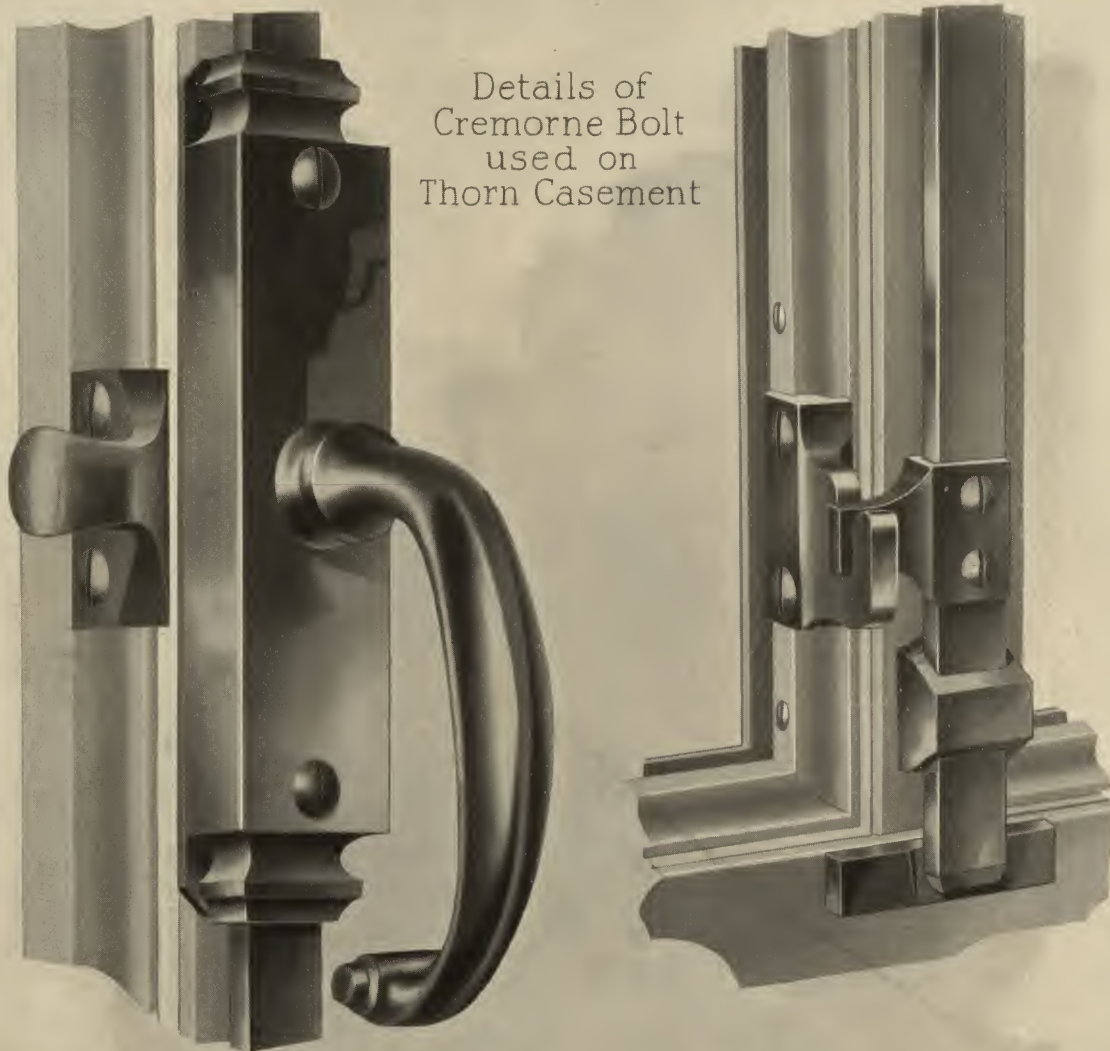
Great care should be taken to see that windows are properly caulked at stone or wood head, jambs and sills. Windows should be set plumb and square and should **not** be warped or twisted. Windows should not be installed until after plastering has been completed.





TYPICAL INSTALLATION OF
THORN CASEMENT
IN STEEL SUB FRAME

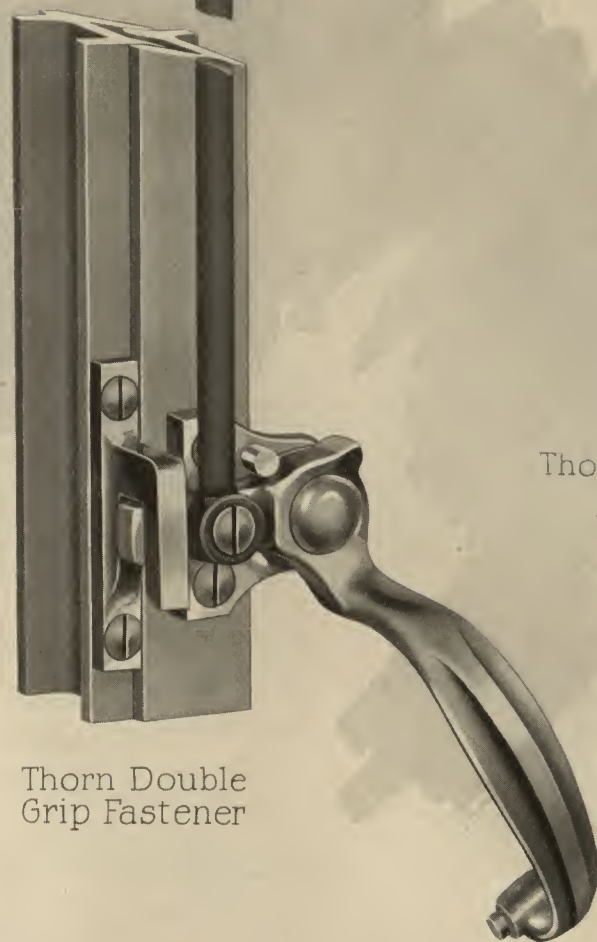
Details of
Cremorne Bolt
used on
Thorn Casement



Thorn Casement Adjuster



Thorn Single
Grip Fastener



Thorn Double
Grip Fastener



Thorn Hinge

THORN FRICTION CLEANING HINGE OF SOLID BRONZE

Designed originally for Thorn Residence Type Casement.

The Thorn Friction Cleaning Hinge can now also be furnished on Thorn Medium and Heavy type casements, providing the leaf does not exceed 2' 0" in width x 6' 0" in height.

This hinge of solid, time resisting bronze, developed by Thorn, has accomplished a five-fold purpose, i. e.:

It brings the outside surface of glass in outswinging casements within easy access from the inside for cleaning.

It retains the beauty for which the casement has always been known in accomplishing the above feature, by retaining the appearance of the standard butt hinge.

It eliminates the sill adjuster and thereby prevents the rattling of the sash in the wind.

It holds the sash firm at the top as well as at the bottom, thus preventing the top of the sash from whipping which is bound to occur where the bottom only is held by an adjuster.

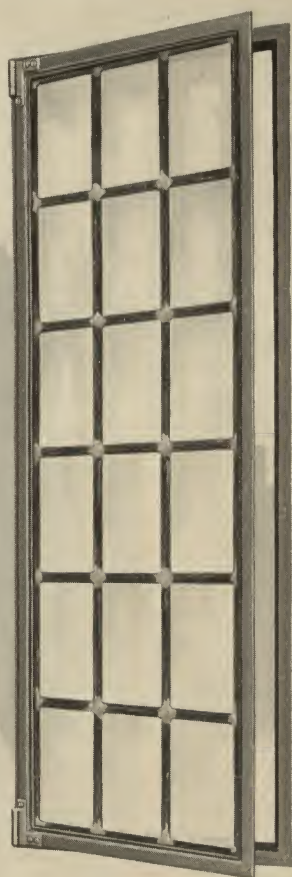
It draws the casement leaf snugly into the frame, making a tight contact between frame and sash.

When the casement leaf is closed the hinge has much the same appearance as an ordinary butt hinge, as it does not project outward from the casement like the unsightly standard extension hinge of the cottage casement, which also accomplishes the glass cleaning feature, but at a great sacrifice—beauty.

As the casement leaf swings open the Thorn hinge slides on a dovetail, extruded bronze rail, carrying the leaf away from the jamb. When fully opened the leaf is sufficiently far from the jamb to permit the cleaning of the outside of the glass from the inside of the building.

The Friction Cleaning Hinge is also provided with a friction adjustment which can be regulated so that the casement leaf will be held open in any position without the use of sill adjusters.

The process of attaching these hinges is such that weathertightness between frame and leaf is assured. The hinges are attached by adjustable screws, the leaf is then carefully fitted to the frame, held securely and the screws tightened and welded so that this correct hinge position is permanent.



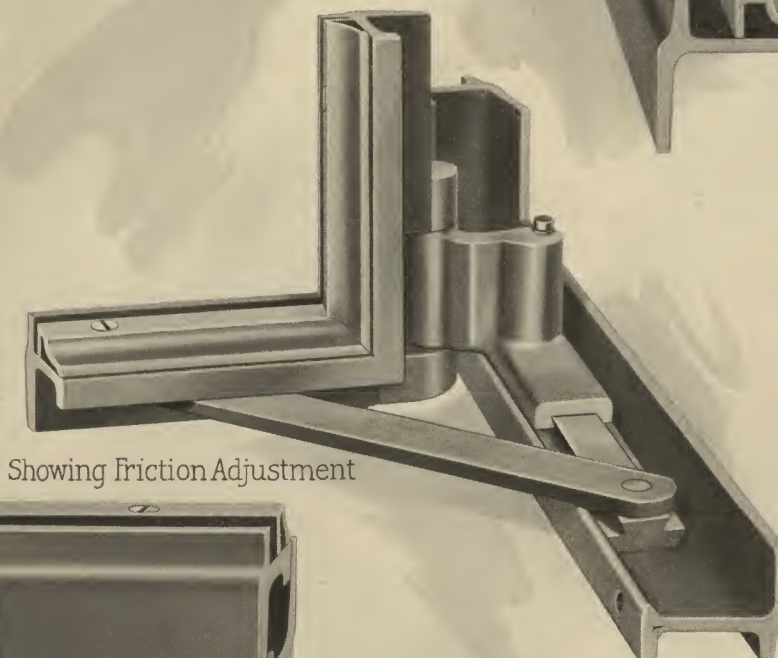
Casement With Leaded Glass
Equipped With Cleaning Hinge



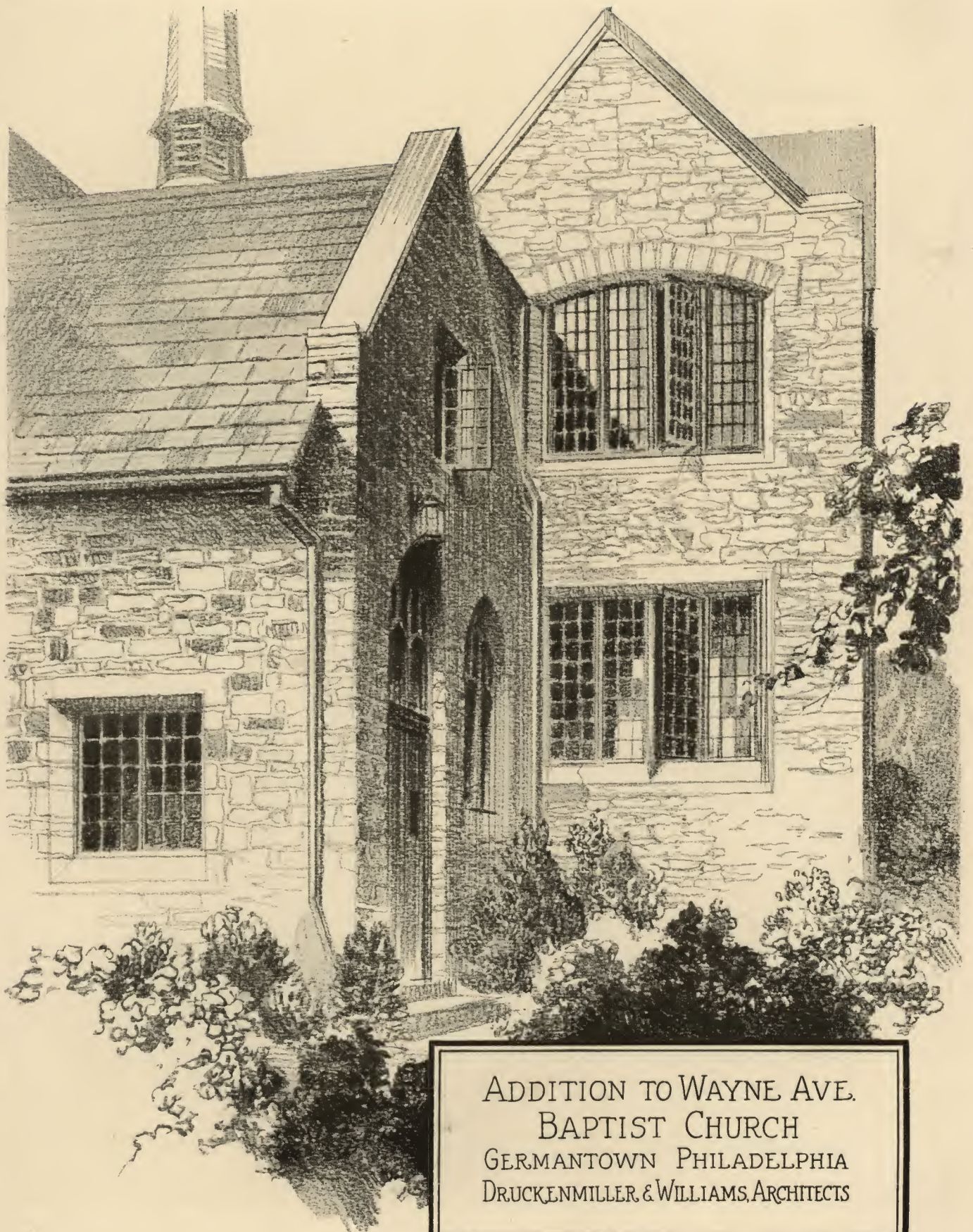
Casement Opens For
Inside Cleaning



Closed Position



Showing Friction Adjustment



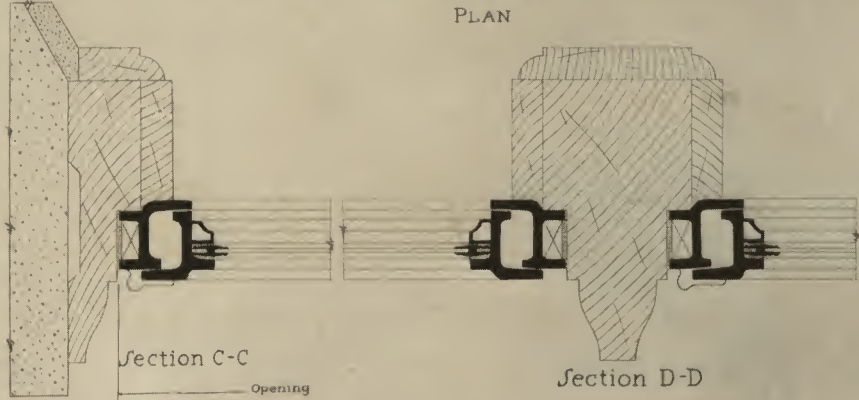
ADDITION TO WAYNE AVE.
BAPTIST CHURCH
GERMANTOWN PHILADELPHIA
DRUCKENMILLER & WILLIAMS, ARCHITECTS



ELEVATION



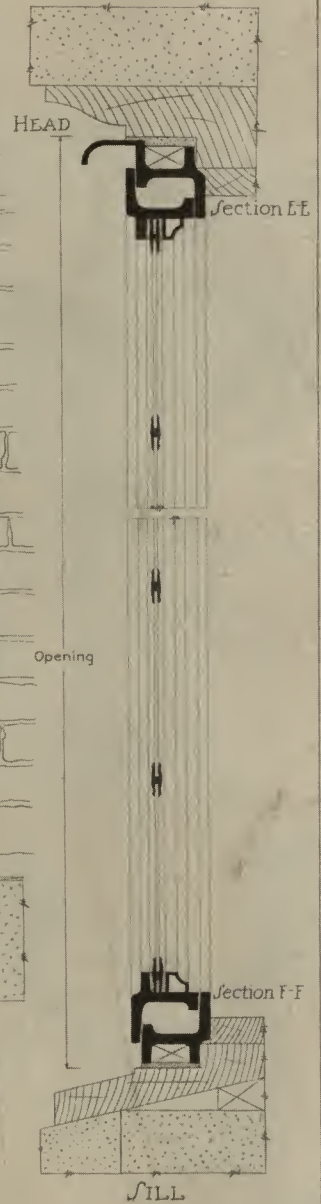
PLAN



Section C-C

Opening

Section D-D

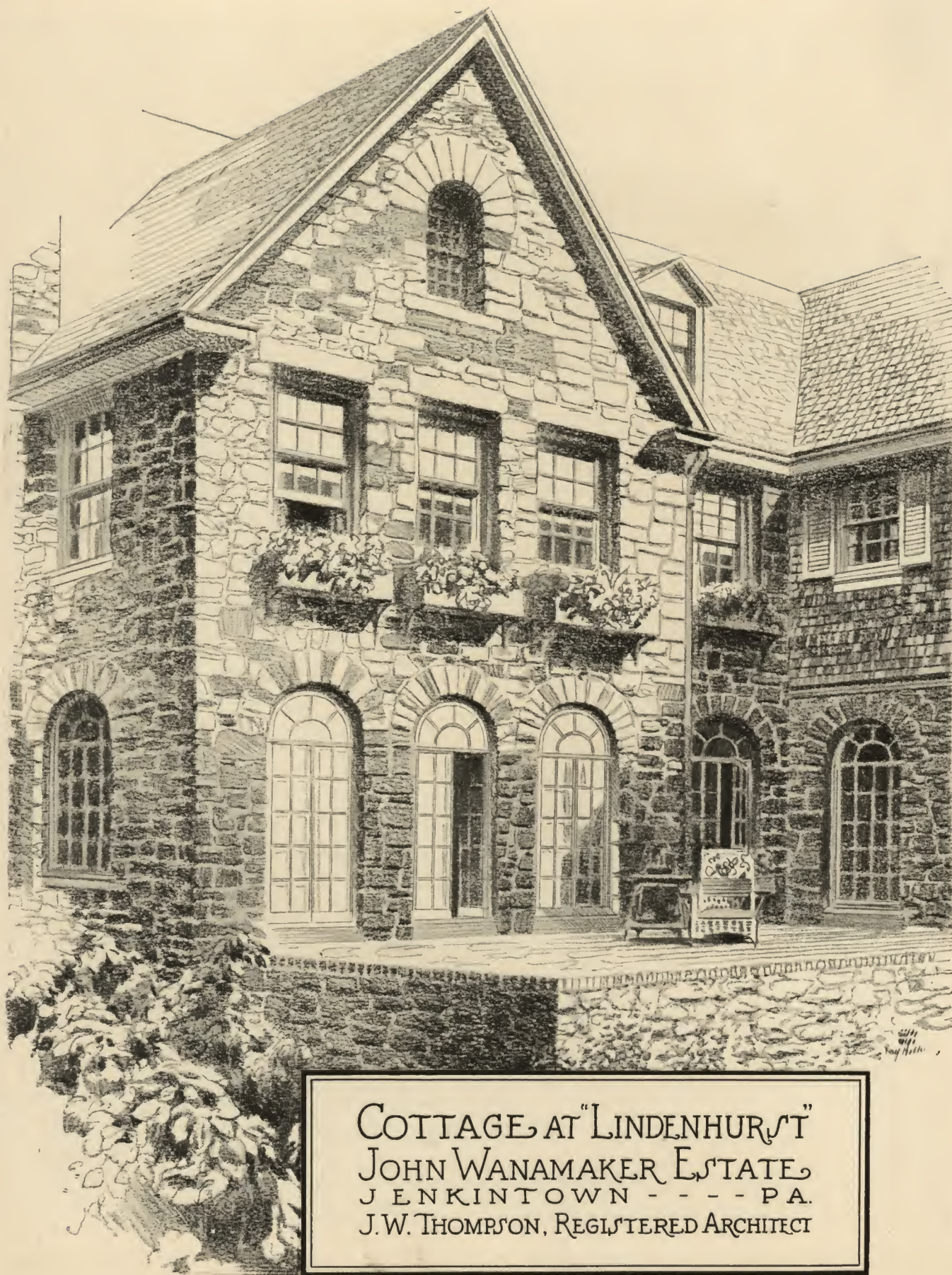


Section E-E

Section F-F

SILL

QUARTER FULL SIZE DETAILS
OF CASEMENT WINDOWS
FOR AN ADDITION TO THE
WAYNE AVE. BAPTIST CHURCH
GERMANTOWN, PHILADELPHIA
DRUCKENMILLER & WILLIAMS, ARCHITECTS



COTTAGE AT "LINDENHURST"
JOHN WANAMAKER ESTATE
JENKINTOWN - - - PA.
J.W. THOMPSON, REGISTERED ARCHITECT



ELEVATION



PLAN

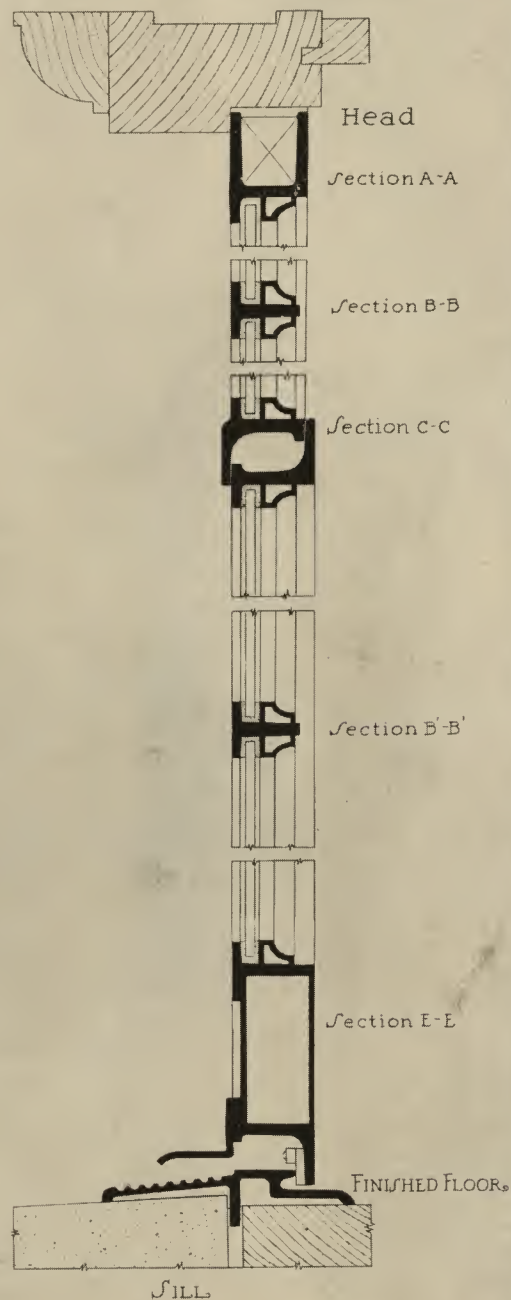


Section F-F

JAMB

Section G-G

MELLING RAIL



Head

Section A-A

Section B-B

Section C-C

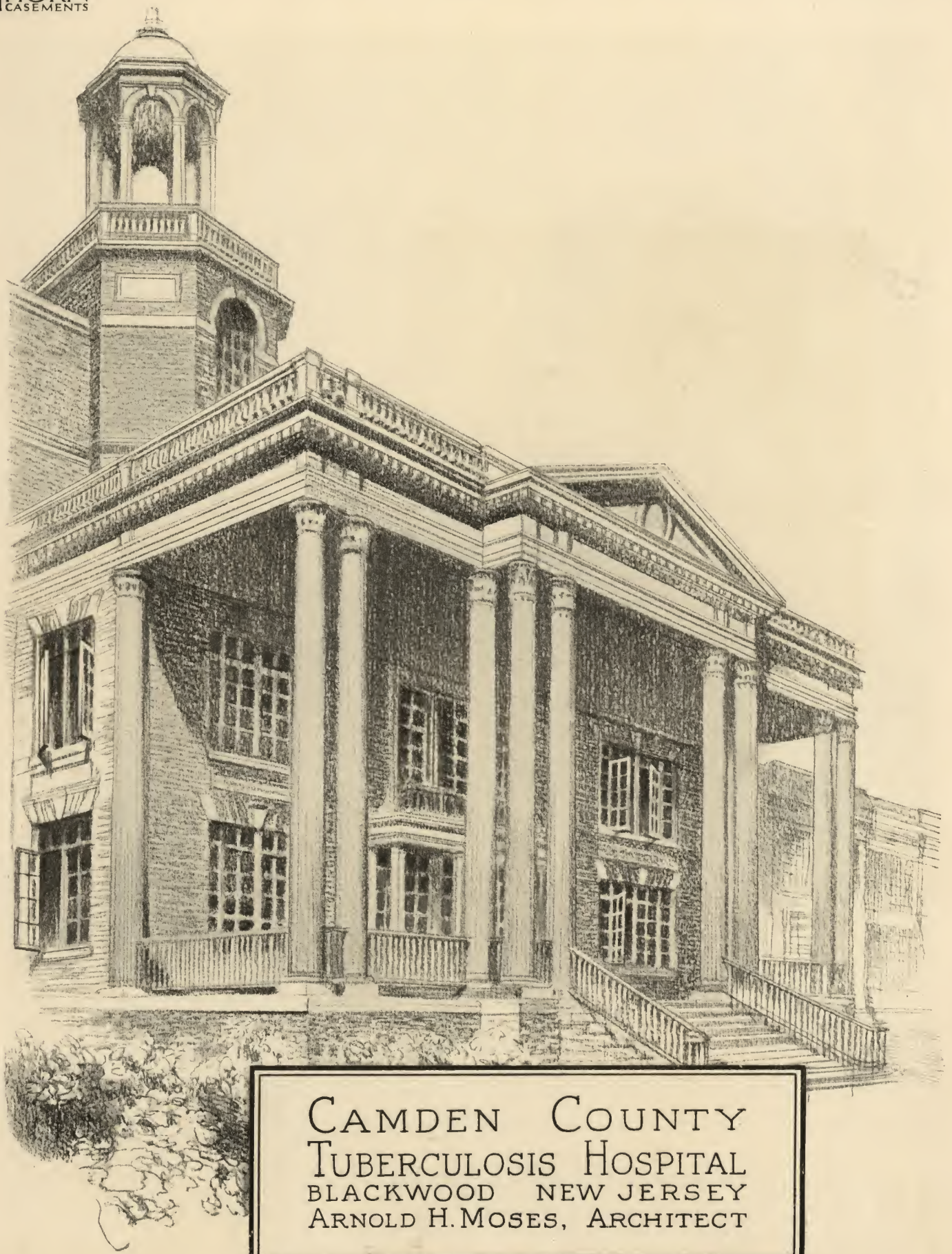
Section B'-B''

Section E-E

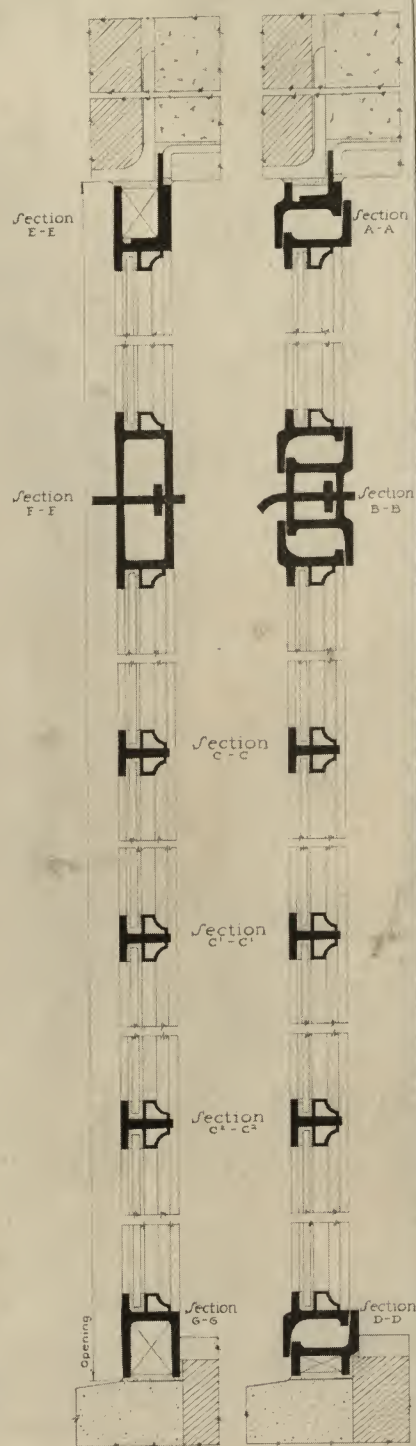
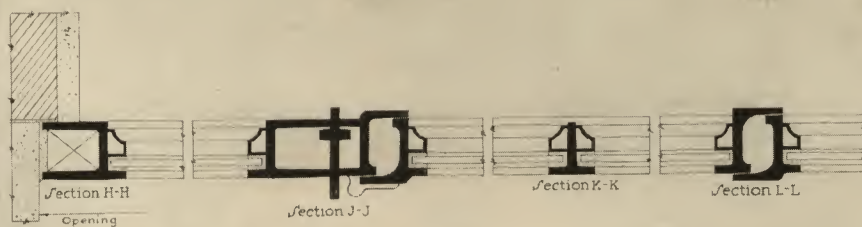
FINISHED FLOOR

SILL

QUARTER FULL SIZE DETAILS OF
CASEMENT DOORS FOR
COTTAGE AT "LINDENHURST"
JOHN WANAMAKER ESTATE
JENKINTOWN, - - - - PA.
J. W. THOMPSON, REGISTERED ARCHITECT



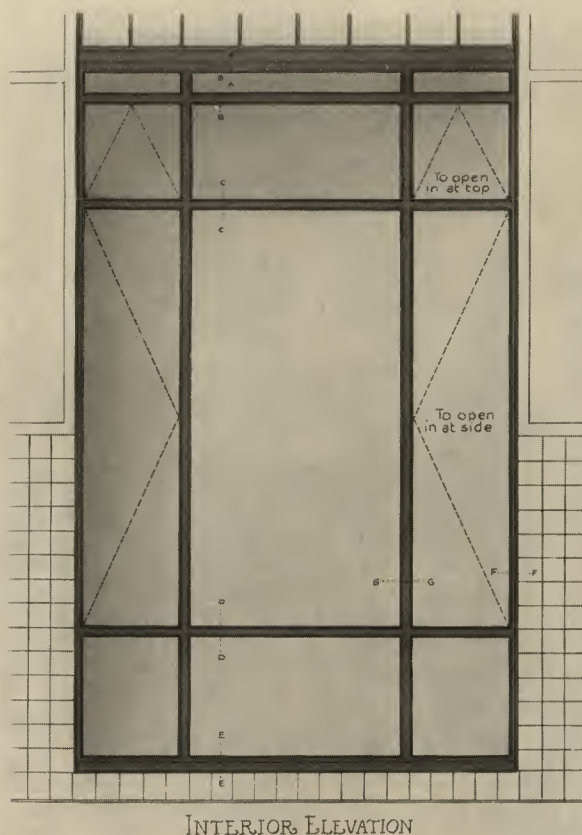
CAMDEN COUNTY
TUBERCULOSIS HOSPITAL
BLACKWOOD NEW JERSEY
ARNOLD H. MOSES, ARCHITECT



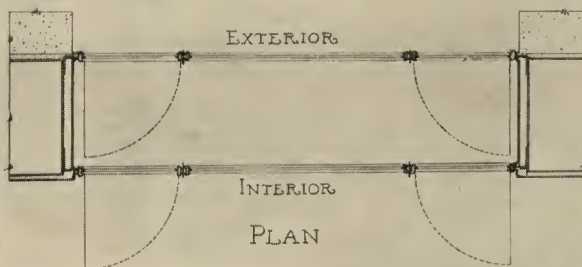
QUARTER FULL SIZE DETAILS OF
CASEMENT WINDOWS FOR THE
CAMDEN COUNTY
TUBERCULOSIS HOSPITAL
BLACKWOOD, NEW JERSEY
ARNOLD H. MOSES, ARCHITECT



OPERATING ROOM
SOMERSET HOSPITAL
SOMERVILLE, NEW JERSEY
CROW, LEWIS & WICK, ARCHITECTS



INTERIOR ELEVATION



PLAN

Section A-A

Section B-B
Inside

Section C-C
Inside

Section D-D
Inside

Section E-E

Sill Inside

Section G-G
Outside

Section G-G
Inside

Section F-F
Outside

Section F-F
Inside

Head

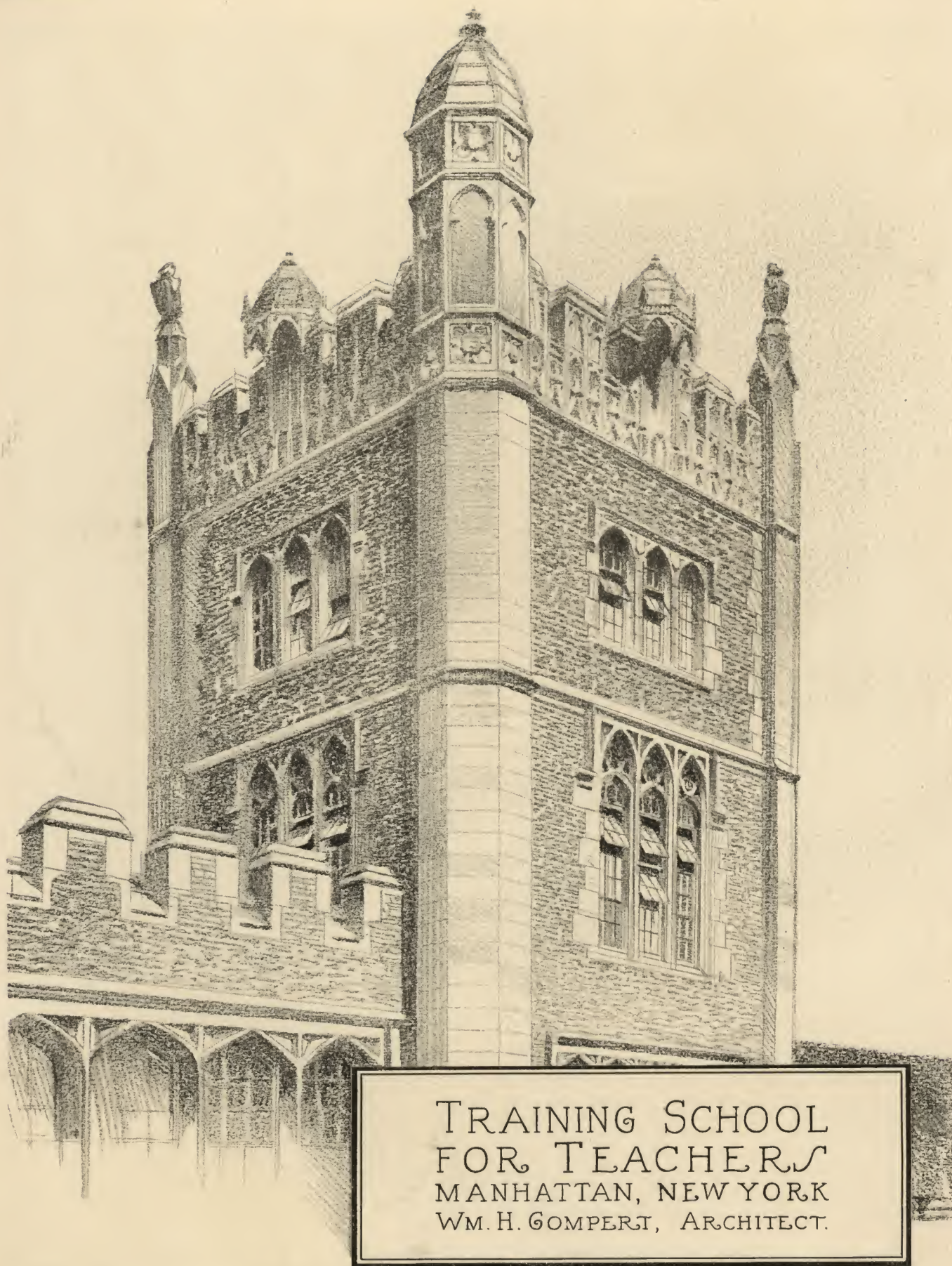
Section B-B
Outside

Section C-C
Outside

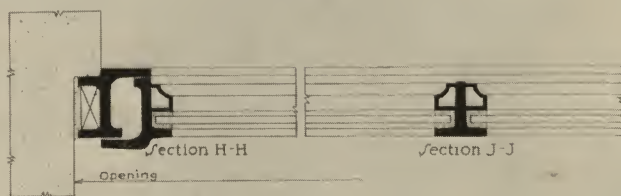
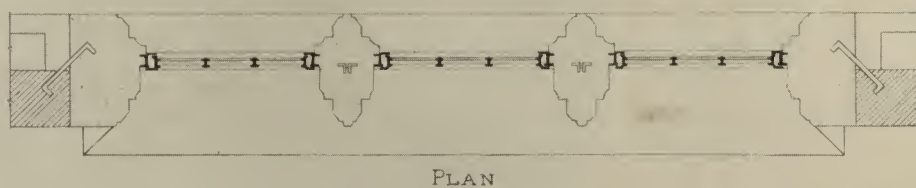
Section D-D
Outside

Sill Outside

QUARTER FULL SIZE DETAILS OF
CASEMENT WINDOWS FOR THE
OPERATING ROOM, SOMERSET HOSPITAL
SOMERVILLE, - - NEW JERSEY
CROW, LEWIS & WICK, ARCHITECTS.



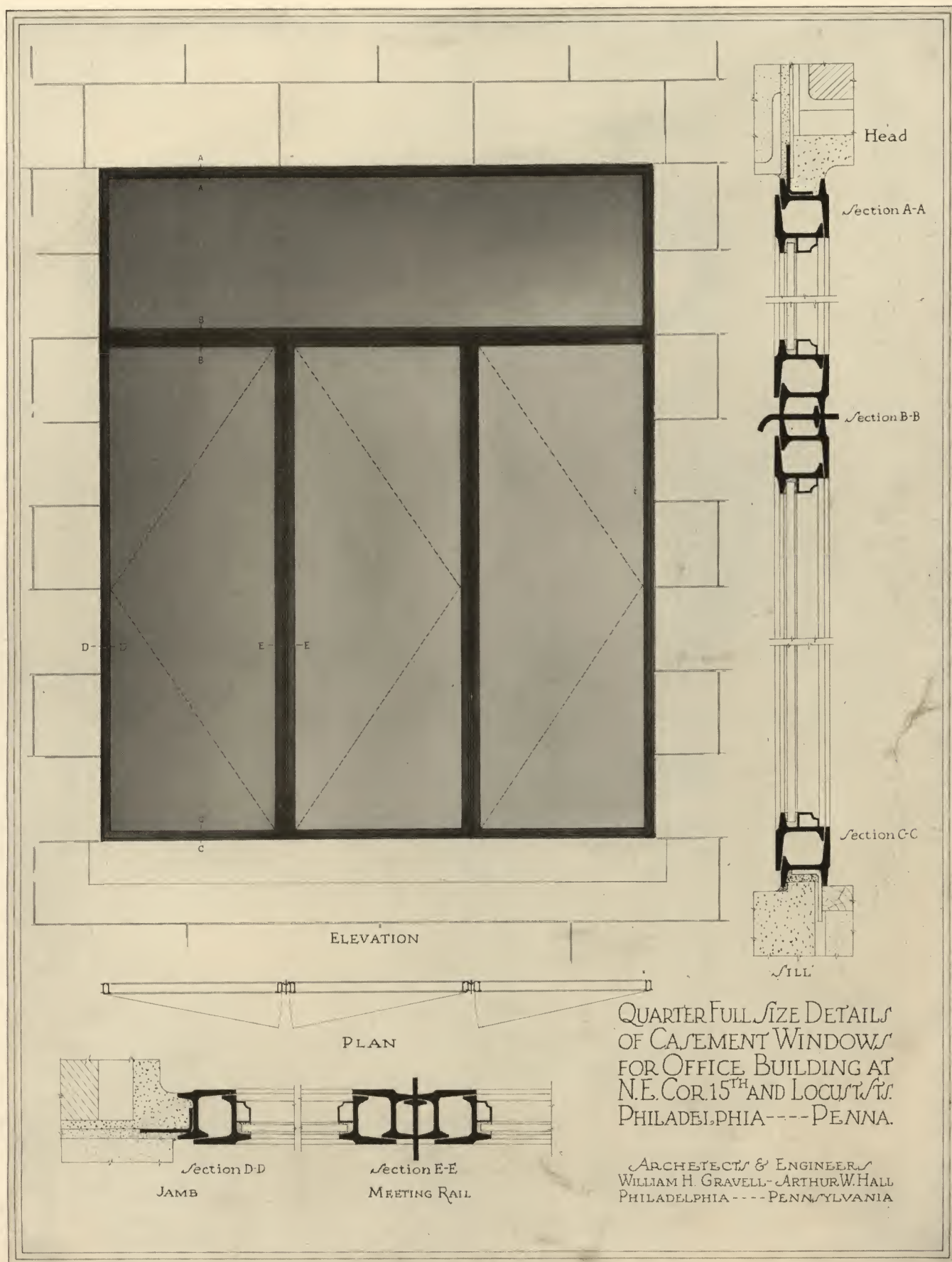
TRAINING SCHOOL
FOR TEACHERS
MANHATTAN, NEW YORK
WM. H. GOMPERT, ARCHITECT.



QUARTER FULL SIZE DETAILS OF
PROJECTED TYPE WINDOWS FOR
TRAINING SCHOOL
FOR TEACHERS
MANHATTAN, - NEW YORK.
WM. H. GOMPERT, - ARCHITECT



Office Building
N.E. cor 15th & Locust St
Philadelphia, Penna
for
RICHARD J. SELTZER
Architects & Engineers
WILLIAM H. GRAVELL
ARTHUR W. HALL

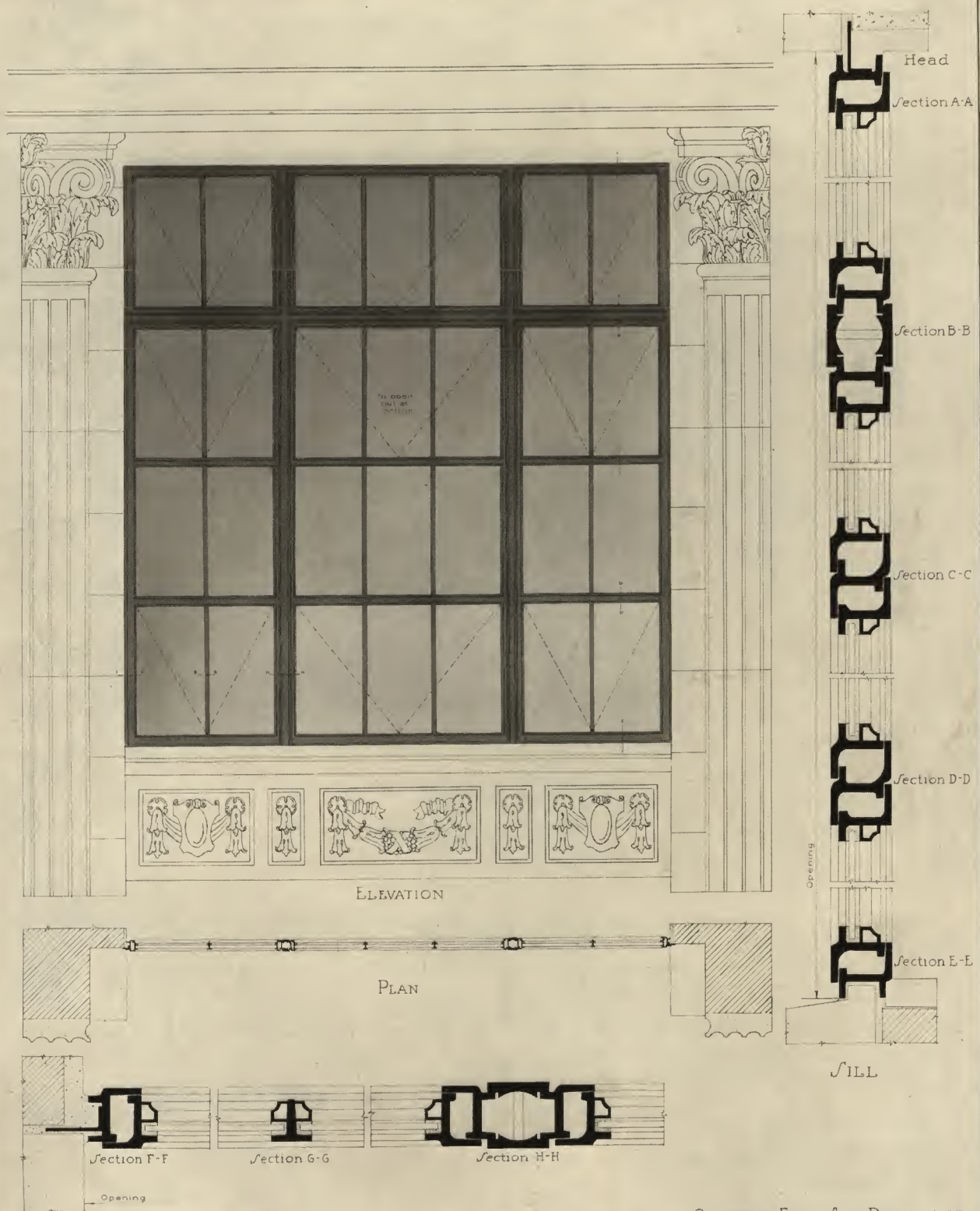


QUARTER FULL SIZE DETAILS
OF CASEMENT WINDOWS
FOR OFFICE BUILDING AT
N.E. COR. 15TH AND LOCUST ST.
PHILADELPHIA---PENNA.

ARCHITECTS & ENGINEERS
WILLIAM H. GRAVELL-ARTHUR W. HALL
PHILADELPHIA---PENNSYLVANIA



COLUMBIA & REAL ESTATE
TITLE INSURANCE COMPANIES
WASHINGTON, D. C.
A. P. CLARK, JR., ARCHITECT



QUARTER FULL SIZE DETAILS OF
PROJECTED TYPE WINDOWS FOR
COLUMBIA & REAL ESTATE
TITLE INSURANCE COMPANIES
WASHINGTON, - - - D. C.
A. P. CLARK, JR., - ARCHITECT



TYPICAL RESIDENCE CASEMENT

OTHER THORN PRODUCTS

THORN RESIDENCE CASEMENTS: Especially designed and constructed to meet the requirements of the modern home or apartment. A special feature is the Thorn bronze non-projecting friction cleaning hinge.

THORN PIVOTED FACTORY SASH: For Industrial buildings of all types.

Made of sturdy sections with solid welded joints. Ventilators are horizontally pivoted and double weathered.

THORN PROJECTED VENTILATOR WINDOWS: Made in two styles, Industrial and Architectural.

Industrial types are particularly adaptable for factory offices and Architectural types are for the better class of offices and schools.

THORN STEEL DOORS: Industrial type for all classes of industrial buildings, made of steel tube.

Architectural types made of hollow steel, with plate panels held in place by steel mouldings, for the finer class of buildings.

THORN CONTINUOUS SASH AND TENSION OPERATOR: For sawtooth and monitor construction, giving natural light in wide buildings, also useful in carrying off smoke and gases.

THORN STEEL SKYLIGHT: Composed of extra heavy steel bars and especially adaptable for train sheds and track coverings.

THORN BASEMENT WINDOWS: Constructed of casement window sections. Frame and sash are shipped assembled with all hardware attached.

THORN STEEL PARTITIONS: For industrial buildings, offices, and schools. Easy to remove and re-locate.

THORN DOUBLE HUNG WINDOWS: Made of heavy galvanized steel. For offices, hotels, and apartments.

THORN STEEL DOOR FRAMES: Formed from heavy steel plate for use in hotels, apartments, offices and schools.

THE J. S. THORN CO. also make a complete line of hollow metal windows, high grade kalamin doors and frames, and special pressed steel shapes.

THORN CASEMENTS

MEDIUM AND
HEAVY TYPES